

Amendments to the Claims:

A clean version of the entire set of pending claims, including amendments to the claims, is submitted herewith per 37 CFR 1.121(c)(3). This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A camera, comprising:
an image sensor including pixels for capturing an image in a field of view and producing image data corresponding to the image;
a memory storing a map identifying one or more pre-defined ~~regions of interested-region of interest segments within the field of view, said regions-region of interest segments~~ corresponding to selected ones of the pixels within the image; and
an access controller configured to retrieve ~~from the image sensor only~~ the image data associated with ~~only~~ the selected pixels identified by the map.
2. (Canceled)
3. (Original) The camera of claim 1, wherein the plurality of pixels are arranged in rows and columns within a pixel array.
4. (Original) The camera of claim 3, wherein said selected pixels are located in one or more selected ones of the rows of the pixels within said pixel array, said access controller being configured to read the image data associated with the selected rows out of said image sensor row-by-row.
5. (Original) The camera of claim 4, wherein said image sensor is a complementary metal oxide semiconductor image sensor.
6. (Canceled)

7. (Original) The camera of claim 3, wherein said selected pixels correspond to individual ones of the pixels within the pixel array, said access controller being configured to read the image data associated with the selected pixels out of the image sensor pixel-by-pixel.

8. (Original) The camera of claim 7, wherein said access controller is further configured to calculate a reset time for each of the rows based on the map to provide a substantially uniform row exposure period throughout the pixel array.

9. (Original) The camera of claim 7, wherein said image sensor is a complementary metal oxide semiconductor image sensor.

10. (Currently Amended) The camera of claim 7, wherein said image sensor is a ~~charge-coupled device~~ complementary metal oxide semiconductor image sensor utilizing a global shutter.

11. (Original) The camera of claim 3, wherein the map includes coordinates of the selected pixels within the pixel array.

12. (Original) The camera of claim 3, wherein the map is a bit-wise map of the pixel array.

13. (Original) The camera of claim 3, wherein the map is a reduced resolution bit-wise map of the pixel array.

14. (Original) The camera of claim 3, wherein the region of interest segments correspond to blocks of pixels each having four corner pixels and the map includes coordinates of two of the corner pixels for each of the blocks of pixels.

15. (Original) The camera of claim 3, wherein the region of interest segments correspond to blocks of pixels each having four corner pixels and the map includes coordinates of one of the corner pixels for each of the blocks of pixels and dimensions of each of the blocks of pixels.

16. (Original) The camera of claim 3, wherein the region of interest segments correspond to blocks of pixels each having four reduced resolution corner pixels and the map includes coordinates of two of the reduced resolution corner pixels for each of the blocks of pixels.

17. (Currently Amended) An optical inspection system, comprising:
a camera including an image sensor for capturing an image of a target surface having two or more region of interest segments within the field-of-view of the camera and producing image data corresponding to the image;

a map stored in a memory defining the two or more region of interest segments;

an access controller configured to retrieve from the image sensor only the image data associated with the two or more region of interest segments; and

an image processing system connected to the camera and memory, and to receive and process only the image data associated with the region of interest segments defined by the map and output from the image sensor under control of the access controller.

18. (Canceled)

19. (Currently Amended) A method for imaging region of interest segments on a target surface, comprising:

capturing with an image sensor an image containing pixels;

storing a map identifying selected ones of the pixels located in one or more region of interest segments within the image; and

~~retrieving outputting from the image sensor only the~~ image data corresponding
~~only to the image and associated with the selected pixels using identified by the map.~~

20. (Canceled)

21. (Currently Amended) The method of claim 19, wherein said ~~retrieving~~
~~outputting~~ further comprises:

reading the image data associated with the selected pixels row-by-row.

22. (Currently Amended) The method of claim 19, wherein said ~~retrieving~~
~~outputting~~ further comprises:

reading the image data associated with the selected pixels pixel-by-pixel.

23. (Original) The method of claim 22, further comprising:
calculating a reset time for each row of the plurality of pixels based on the
map.

24-25. (Canceled)

26. (New) The camera of claim 1, wherein the map identifies at least two pre-
defined region of interest segments within the field of view, said region of interest
segments being spatially separated from each other, and wherein the access
controller is configured to retrieve from the image sensor only the image data
associated with the two spatially separated region of interest segments.

27. (New) The camera of claim 1, wherein the map identifies at least two pre-
defined region of interest segments within the field of view, said region of interest
segments constituting a single, non-rectangular shaped ROI, and wherein the access
controller is configured to retrieve from the image sensor only the image data
associated with the single, non-rectangular shaped ROI.

28. (New) The optical inspection system of claim 17, wherein the two region of interest segments are spatially separated from each other, and wherein the access controller is configured to retrieve from the image sensor only the image data associated with the two spatially separated region of interest segments.

29. (New) The optical inspection system of claim 17, wherein the two region of interest segments constitute a single, non-rectangular shaped ROI, and wherein the access controller is configured to retrieve from the image sensor only the image data associated with the single, non-rectangular shaped ROI.

30. (New) The method of claim 19, wherein the map identifies at least two pre-defined region of interest segments within the field of view, said region of interest segments being spatially separated from each other, and wherein outputting from the image sensor only the image data corresponding to the selected pixels identified by the map comprises outputting from the image sensor only the image data associated with the two spatially separated region of interest segments.

31. (New) The method of claim 19, wherein the map identifies at least two pre-defined region of interest segments within the field of view, said region of interest segments constituting a single, non-rectangular shaped ROI, and wherein outputting from the image sensor only the image data corresponding to the selected pixels identified by the map comprises outputting from the image sensor only the image data associated with the single, non-rectangular shaped ROI.